

NJ Trout in the Classroom

# Tank Care Guide



2021

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**Set Up Photos Credit:**

TU National

# Tank Set Up

*There are many different chillers and filters being used. These are generic instructions. For specifics, please read your manufacturer's booklet on your equipment.*



1. Unpack all materials and compare to shipping lists. Ensure that nothing is missing or broken. Check plastic pieces for cracks, particularly the filter components.
2. Place tank in a location away from heat, excessive light, and activity. If next to a window, make sure that the window shade is down until the fry are swimming around, or that there is some protection around the tank. Do not put the tank next to an active radiator. Because a filled tank will be top heavy, place it away from areas where students might accidentally bump into it. Clean out any dirt inside the tank with a wet paper towel. Do not use soap or any cleaning chemicals--the residue from these compounds can persist in the aquarium and harm your trout.
3. Locate the GFI Certified electrical outlet and plug in the power strip. This should be close enough to the tank that all electric devices can reach. Ideally, this should be right behind or underneath the tank. Turn the power strip off.



4. Place the chiller to the side of or below the tank with the front facing out. Please ensure that it is at least 12 inches off the ground, with 10 inches on every side for airflow. For a flow-through chiller, open the plastic bag with chiller parts and remove two water nozzles. Screw these in place on the chiller, tighten them by hand. You may carefully tighten these further with pliers, but be mindful of the limitations of the plastic.
5. Measure a length of chiller tubing that will reach from the chiller to the bottom of the tank without stress or kinks, be generous with length because a tube can always be made shorter but not longer. Cut this length of tubing and slide one end over the chiller input nozzle. Measure a similar length of tubing for the output nozzle of the chiller and cut this piece. Attach this piece of tubing by sliding it over the chiller output nozzle. Tight tubing can be made more flexible by dipping it in very hot water. You may need to remove the nozzle, also. Depending on chiller design, there may not be any specific input or output side.
6. Next slide the metal clamp over the tube to the nozzle on the chiller. Screw the clamp in place over the end of the tube so that the outer edge of the clamp and the tube are matched. The clamp should be tight but not forced.



7. Remove the pump from its box and locate the plastic adapter nozzle for the pump. Screw this nozzle in place, and slide the other end of the input chiller tube over the nozzle on the pump. This connection does not need a clamp. Install the pump filter if one is included but not attached. Gently place the pump inside the tank, place the pump power cord near the power strip.



9. Unpack and assemble the filter according to the included directions. Make sure that the filter intake tube is as close to the tank bottom as possible. Cover the intake for your filter with some sort of mesh or net, that will keep the fry from getting sucked into your filter (plastic net bags and pantyhose are popular materials for this). Secure the mesh with an aquarium-safe method, such as a rubber band. Canister filters can be placed next to or underneath the tank, and they can be hooked in-line with a flow-through chiller. Place the filter power cord near the power strip.

10. Unpack the airstone, air pump, and airstone tube. Attach one end of the airstone tube to the airstone, and the other to the air pump. Place the air pump on the ground near the power strip. The rubber feet of the air pump should be on the ground to prevent excessive noise. Place the airstone in the tank, away from the filter intake tube. Place a check valve (to prevent backflow of water) in the airstone tube. To do this, make a cut in the air tubing and use the check valve to connect the two pieces back together. Air should push the flap and compress the spring inside the valve.



11. Assemble the hatching basket by stretching the net over the outside of the plastic frame, or carefully securing the net to the inside of the frame. Hang the basket on the tank wall by bending the metal clips.

12. Fill the tank with tap water using any clean container or tubing. The water level should be no more than 2 inches from the top of the tank, but should not be so close that it might spill. Use a cup to fill the filter chamber with water until it overflows back into the tank.
13. Plug in all electric cords using the power strip, but keep the power off. Once everything is plugged in, stand back from the tank to double check all connections and ensure that everything is ready for operation. The output tube should be secure; a student can hold this tube in place. Have some paper towels on hand in the event of a leak.
14. Turn on the power strip and check for any leaks on the chiller. The bubbler should be creating a large volume of small bubbles. The chiller may beep, and is now warming up. Remove the output hose from the water carefully to ensure that there is good water flow. The filter should become much quieter after all the air is pushed out of the system.
15. Adjust the chiller temperature to the appropriate setting. You may have to wait a few minutes before the chiller begins to operate fully. You will probably hear the chiller fan or compressor operating in a few minutes.
16. You will need to allow any chlorine in your tap water to dissipate for the next 48 hours. Then, follow the bottle directions to add Microbe-Lift Special Blend to the tank at that time. Also note that it is helpful to keep the chiller off until one week before Egg Day as the warmer temperatures promote bacterial growth.
18. After all this setup, prepare for your trout eggs at least 1 week in advance by turning the chiller temperature down to 52 degrees.
19. Now it is important to trout-proof your tank, by protecting your small fingerlings from the strong force of the water intakes for your filter and chiller. Use netting such as plastic net bags, cheesecloth or nylons secured with a rubber band on any intakes where fish can get sucked into your moving parts.
20. Insulation is CRUCIAL to maintaining a stable environment for your trout and minimizing wear on your chiller. Many different materials can be used to insulate a tank; a popular one uses foam board.

## Tank Set Up Videos

*There are many different chillers and filters being used. These are generic instructions.*

*For specifics, please read your manufacturer's booklet on your equipment.*

- How to Install Canister Filters: <https://youtu.be/FFdiocYosHo>
- How to Use a Siphon Gravel Vac - <https://youtu.be/mtbEbdj70J8>
- How to set up an air pump - <https://youtu.be/BNx6IgEQIdw>
- Freshwater Testing - [https://youtu.be/1\\_oVUYYYH17c](https://youtu.be/1_oVUYYYH17c)
- <https://www.youtube.com/watch?v=uNNPegVpYYI>
- [https://www.youtube.com/watch?v=phAfIBN9S\\_4](https://www.youtube.com/watch?v=phAfIBN9S_4)
- <https://www.youtube.com/user/sackley77>



# Trout Care Tasks

Use this chart to keep your trout tank in shape.

Daily Goals	52-53 F	7.0	0—0.5	1	10	50-100	50-100	Number of Dead	Equipment working (Y/N)
Daily Tasks	Care Member	Temperature	pH	Ammonia	Nitrite	Nitrate	KH	GH	
Monday									
Tuesday									
Wednesday									
Thursday									
Friday									

## Weekly Tasks

- Wipe down all sides with a sponge
- Vacuum bottom and under anything on the bottom
- Remove pre-filters from inside the tank and rinse in clean, cured water
- Check hoses for loose connections



## Bi-Weekly Tasks

- Rinse filter components from inside the filter after the fry are free swimming.
- Remove dust and lint from the fins of the coolant tubing with a small vacuum, soft bristled dust brush or dust cloth. The fins are the small, black slats on the side of the chiller.

<b>September</b>	<b>October</b>	<b>November</b>	<b>December</b>	<b>January</b>	<b>February</b>	<b>March</b>	<b>April</b>	<b>May</b>	<b>June</b>
Set up your equipment and make sure it is all working	Turn chillers on 1 week before Egg Day	Clean the chiller air filters							
Register by September 10	Egg Day arrives	Remove dead fish as needed							
Dose your water with NovAqua Plus to eliminate chlorines and chloramines.	Pick out bad eggs daily to prevent spread of fungus	Test water daily, or no less than 3x a week	Test water daily, or no less than 3x a week	Test water daily, or no less than 3x a week	Test water daily, or no less than 3x a week	Test water daily, or no less than 3x a week	Test water daily, or no less than 3x a week	Test water daily, or no less than 3x a week	Test water daily, or no less than 3x a week
Add Microbe Lift Special Blend per bottle directions and turn the chiller off.	Vacuum water from bottom of the tank once a week, removing no more than 10% of the water. Treat with NovAqua Plus if your water is treated with chlorines or chloramines.	Vacuum water from bottom of the tank once a week, removing no more than 10% of the water. Treat with NovAqua Plus if your water is treated with chlorines or chloramines.	Vacuum water from bottom of the tank once a week, removing no more than 10% of the water. Treat with NovAqua Plus if your water is treated with chlorines or chloramines.	Vacuum water from bottom of the tank once a week, removing no more than 10% of the water. Treat with NovAqua Plus if your water is treated with chlorines or chloramines.	Vacuum water from bottom of the tank once a week, removing no more than 10% of the water. Treat with NovAqua Plus if your water is treated with chlorines or chloramines.	Vacuum water from bottom of the tank once a week, removing no more than 10% of the water. Treat with NovAqua Plus if your water is treated with chlorines or chloramines.	Vacuum water from bottom of the tank once a week, removing no more than 10% of the water. Treat with NovAqua Plus if your water is treated with chlorines or chloramines.	Vacuum water from bottom of the tank once a week, removing no more than 10% of the water. Treat with NovAqua Plus if your water is treated with chlorines or chloramines.	Vacuum water from bottom of the tank once a week, removing no more than 10% of the water. Treat with NovAqua Plus if your water is treated with chlorines or chloramines.
Remove dead fish daily to prevent spread of fungus	Add Microbe Lift - Special Blend per bottle directions	Add Microbe Lift - Special Blend per bottle directions	Add Microbe Lift - Special Blend per bottle directions	Add Microbe Lift - Special Blend per bottle directions	Add Microbe Lift - Special Blend per bottle directions	Add Microbe Lift - Special Blend per bottle directions	Add Microbe Lift - Special Blend per bottle directions	Add Microbe Lift - Special Blend per bottle directions	Add Microbe Lift - Special Blend per bottle directions
Test water daily, or no less than 3x a week	Add Nite Out II per bottle directions								

Vacuum water from bottom of the tank once a week, removing no more than 10% of the water	Add NovAqua Plus per bottle directions								
Add Microbe Lift - Special Blend per bottle directions	Replace the removed water with dechlorinated water after vacuuming	Replace the removed water with dechlorinated water after vacuuming	Replace the removed water with dechlorinated water after vacuuming	Replace the removed water with dechlorinated water after vacuuming	Replace the removed water with dechlorinated water after vacuuming	Replace the removed water with dechlorinated water after vacuuming	Replace the removed water with dechlorinated water after vacuuming	Replace the removed water with dechlorinated water after vacuuming	Replace the removed water with dechlorinated water after vacuuming
Add Nite Out II per bottle directions	Do a 20% water change from bottom of tank if your readings are way off or your fish are acting odd	Do a 20% water change from bottom of tank if your readings are way off or your fish are acting odd	Do a 20% water change from bottom of tank if your readings are way off or your fish are acting odd	Do a 20% water change from bottom of tank if your readings are way off or your fish are acting odd	Do a 20% water change from bottom of tank if your readings are way off or your fish are acting odd	Do a 20% water change from bottom of tank if your readings are way off or your fish are acting odd	Do a 20% water change from bottom of tank if your readings are way off or your fish are acting odd	Do a 20% water change from bottom of tank if your readings are way off or your fish are acting odd	Do a 20% water change from bottom of tank if your readings are way off or your fish are acting odd
Add NovAqua Plus per bottle directions	Change your filter media, one cartridge per week before break	Do a 50% water change before break and add your chemicals	Do a 20% water change from bottom of tank if your readings are way off or your fish are acting odd	Do a 20% water change from bottom of tank if your readings are way off or your fish are acting odd	Do a 20% water change from bottom of tank if your readings are way off or your fish are acting odd	Do a 20% water change from bottom of tank if your readings are way off or your fish are acting odd	Do a 20% water change from bottom of tank if your readings are way off or your fish are acting odd	Do a 20% water change from bottom of tank if your readings are way off or your fish are acting odd	Do a 20% water change from bottom of tank if your readings are way off or your fish are acting odd
Replace the removed water with dechlorinated water after vacuuming	Replace the removed water with dechlorinated water after vacuuming	Replace the removed water with dechlorinated water after vacuuming	Replace the removed water with dechlorinated water after vacuuming	Replace the removed water with dechlorinated water after vacuuming	Replace the removed water with dechlorinated water after vacuuming	Replace the removed water with dechlorinated water after vacuuming	Replace the removed water with dechlorinated water after vacuuming	Replace the removed water with dechlorinated water after vacuuming	Replace the removed water with dechlorinated water after vacuuming

	Do a 20% water change from bottom of tank if your readings are way off or your fish are acting odd										Store equipment in a safe space.
											Reorder your mandatory supplies for next year
											Re-register for the fall

## Holidays and Vacations

Trout are wild animals and can survive up to 14 days without eating. No need to drop in or hire a trout sitter while you aren't in school. Use this to talk about how, when and why this would occur in a stream.

Trout need clean water, probably more so than food. In the weeks before a long break, change each filter cartridge, one per week. Two days before break, do a 50% water change. Remember to add your bacteria back into the tank.

A few days before break, you may want to start feeding the fish a bit less food. Less food means less waste which means less ammonia.

As you are changing the water, try and maintain an even water temperature so you do not shock the trout.

# Tank End of Year Maintenance

*It is important to clean your equipment at the end of year in order to ensure a successful following year, as well as to extend the life of your equipment.*

## Aquarium Tank

1. Empty the tank almost all the way. Then turn off all the equipment.
2. Finish emptying the tank and disconnect the tubing.
3. Use a 10% bleach solution to wipe down the insides of the tank. A soft sponge (dedicated only to this job) can be used to scrub hard to remove scale and algae growth.
4. Use a 10% bleach solution to clean the tubing. You can attach a narrow straw or bottle brush to a string and pull it through the tubing to help remove the scale and algae.
5. Wipe the tank dry with a cloth and let air dry completely.
6. If you use gravel, rocks or other decorations, you should remove them, wash them and dry them by laying them on a cloth or towel in the sun or a well ventilated area. They can also be sterilized with a 10% bleach solution, but they must be completely dry.

## Filter

1. Take the filter apart and scrub all the plastic parts with a 10% bleach solution.
2. Throw away the used cartridges and media and replace with your new materials if you have them.
3. Completely air dry the filter and its parts.
4. Use Vaseline and rub it into the O-rings and larger rubber gasket at the top of the filter to prevent cracking and dry rot.

## Chiller

1. Have a small air compressor handy. Remove the inlet/outlet hose fittings as well as any nuts and gasket used to secure the fittings to the housing.
2. Remove the front cover by removing the screws or depressing the locking tabs. Disconnect the wires going to the temperature controller by “splitting” the nylon connectors. With both connectors, the locking tabs must be disengaged before the connectors will come apart. Move the front cover aside.
3. On 1/2 HP chillers it may be necessary to remove screws holding the front and rear panels to the housing.
4. Remove the screws holding the housing to the base. Lift the housing off. The inlet/outlet pipes may need to be shifted slightly to remove the housing. At this point, the chiller is ready to be blown out. In most chillers, air will travel from the compressor end of the unit to the radiator end. The dirt and debris collect on the fan side of the radiator. Some of the dirt travels through the radiator fins and is on the outside, but 90% plus is on the inside and difficult to see. A compressor capable of delivering 90-100 PSI with an appropriate blow off nozzle is required to remove the dirt. A throwaway, nylon bristled paintbrush and a toothbrush will help with dirt removal.
5. Begin by blowing from outside the radiator, through the fins and towards the fan. Most dirt will be blown out, but some will remain trapped in the fins behind the fan shroud. Use the brush and toothbrush to help dislodge it and continue blowing it—from front to back and in side to side and up to down motions.

6. If there is a large accumulation of dirt on the fan, the air is probably moving in the other direction. In that case, blowing from the fan side to the outside of the radiator will remove the largest amount of dirt.
7. Clean off the other components of the chiller base with brush and air. Clean the inside and outside of the housing with brush and air. Position the housing on the chiller base being careful to seat the housing around the inlet and outlet pipes. Reassemble the screws holding the housing on the base. Reassemble any gaskets and nuts to the inlet and outlet pipes. Do not over-tighten. On the 1/2 HP chillers it may be necessary to reassemble the front and rear panels to the housing and base.
8. If there is a filter on the front cover, remove it and thoroughly clean it with the air and a brush. Reassemble the filter to the front cover.
9. Position the front cover to the chiller. Reconnect the electrical wires making sure that the connector locking tabs are engaged. Reinstall the front cover on the housing or front panel.
10. Maintenance is complete.



## Troubleshooting Guidelines

Problem	Cause	Recommended Action	Notes
Algae	Ecological	Do nothing. Green is good!	
Ammonia is high	Tank not being cleaned enough or	1. Stop feeding the fish until the ammonia has leveled off.	
	Uneaten food or waste is raising levels	2. Remove water from the bottom of the tank and do a 1/4 water change.	
		3. Retest	
		4. Repeat steps 2 and 3 until the ammonia has leveled off	
Back up Power	Maintenance and prevention	There is no perfect solution for TIC tanks that we have found yet.	We are working on this nationally.
Charcoal	Maintenance and prevention	Read the filter instructions for what replacement charcoal to purchase. Replace it at the beginning of the year and right before the long holiday break between Christmas and New Years.	
Chiller cleaning	Maintenance and prevention	Follow the monthly and yearly cleaning instructions for the brand chiller you have. If yours is not specified, use the generic instructions	A clean chiller is imperative to extending the life of your most expensive piece of TIC equipment.

			<p>We charge \$50 to clean your chiller at the end of the year, plus \$0.52 a mile for each mile that TU is on the road to your school, to the repair team, back to the repair team for pick up, back to the school and back to their house.</p>	<p>Checks can be made out to NJSCTU.</p>
Chiller fan is not spinning	Wear and tear		<ol style="list-style-type: none"> <li>1. Put a fan in front of the chiller to keep the air circulating in the chiller.</li> <li>2. Contact the State Coordinator for assistance</li> </ol>	<p>This is just a band aid approach until either the school's TU TIC Chapter Coordinator or a member of the chiller repair team can get a spare to the school and get your chiller fixed.</p>
Chiller input/output valve is broken	Wear and tear		<p>Contact the chiller manufacturing company for a replacement.</p>	
Chiller is leaking	Wear and tear		<p>If it is under warranty, contact the manufacturer. If not, contact the school's TU TIC Chapter Coordinator for a spare.</p>	<p>If you borrow a spare and your chiller is beyond fixing, plan on purchasing a new chiller.</p>
Chiller is not working	Kinked or clogged hoses		<ol style="list-style-type: none"> <li>1. Check tubing for kinks or clogs. If this is the issue go to step 2. If this is not the problem, go to step 3.</li> <li>2. Unkink or unclog</li> <li>3. Unplug everything and make sure the chiller is clean.</li> </ol>	<p>Chiller issues need to be addressed immediately since trout are temperature sensitive. Many of the past problems with chillers were from them being unclear. Follow the cleaning steps in the maintenance manual each month and at the end of the year for optimal chiller performance.</p>
	or mechanical issue			

		4. Clean the chiller following the steps outlined in the maintenance manual	
		5. If none of that works, contact the State Coordinator for assistance.	
Chloramines in the water	Municipal water that is treated with chloramines is being used.	Use NovAqua Plus	Chloramines do not evaporate, you must use a product.
Chlorine in the water	Municipal water that is treated with chlorine is being used	Allow water to sit out for 24 hours before placing in the tank or use NovAqua Plus	NovAqua Plus is part of your kit. If your water is not treated with chlorine or chloramines, then you do not need this product.
Dead alevin	Natural or tank related	Dead alevin will lose their color and their eyes will appear whitish. They will not move if you gently shake the basket.	Dead eggs, alevin or fish must be removed as soon as possible from the tank in order to prevent tank issues.
Dead eggs	Natural	Remove dead eggs to prevent problems with healthy eggs	Not all eggs will hatch. Use this as a teachable moment. In a stream, even less would hatch. Eggs from the hatchery are treated and non-viable eggs removed daily.
Dead fish	Tank not being cleaned enough or	1. Remove the healthy fish and place them in a bucket of dechlorinated water. 2. Add your aerator and bags filled with ice to the bucket.	
	Uneaten food or waste is raising levels	3. Add NovAqua Plus to the bucket, following the bottle's instructions.	
		4. Do an 80% water change	
		5. Scrub the tank with your scrub brush, trying to remove as much crud as possible.	

			6. Refill the tank and get the water-cooling again. Add bags of ice to assist in the cooling process.	
			7. Replace at least one charcoal filter in your filter.	
			8. Add your bacteria again, along with any other needed chemicals and replace your fish.	
			9. You may need to add more chemicals over the next few days	
Egg Box	Equipment		Hang on the side of the tank with the bulk of the basket in the water. Keep it out of the main flow of water from the filter and the aerator.	
Equipment not working	Issue		Check to make sure everything is plugged in and that power is going to the outlet.	There have been times when a set up has come unplugged over a weekend and relted in total fish loss.
Exploded belly	Parasite or infection		There are many things that the fish can get. Without a necropsy , we cannot be sure of the cause.	
Filter will not open	Normal		The suction of the water may make it difficult to open. Refer to the manufacturer's guide on how to open it.	

Fish are deformed	Genetic birth defects	Take no action	Birth defects and deformities are normally occurring genetic variations. They occur in the wild as well. Use this to teach about survival of the fittest or favorable adaptations brought about through genetic mutations.
Fish are different sizes	Natural	Take no action	Egg sizes vary. Fish grow at different rates due to environmental variables. Use this to teach about traits passed on by genetics or how the environment shapes our genetic make up. Genetics is not the only factor in the development of living things.
Fish eating each other	Natural	Take no action, separate the big, hungry fish from the others, or feed that one fish less food, more often.	Trout are carnivores and opportunistic feeders. Use this as a teaching moment.
Fish lying on bottom of tank or swimming on side	Natural Early Mortality Syndrome (EMS) OR See below	Take no action. If this happens after a few weeks of feeding, it is not EMS. Assess other possibilities below	Since eggs destined for schools come from a few females the chances of EMS are very small
	Pathogen OR see below	Take no action	There are many pathogens that get passed on from adult to offspring. If one or only a few fish are exhibiting this behavior, it could be the result of an injury from tank maintenance.
	Injury from tank maintenance or see below	Be very careful when cleaning dead eggs, vacuuming the tank or changing water. The harmful effects of injury during tank maintenance may not be visible until later stages of development.	if many fish are exhibiting this behavior, it could be a pathogen.
	Genetic abnormality	Take no action	

GH is low	Environmental	Use an additive like Seachem Equilibrium	Additives will raise the pH as well so beware of that.
		Add crushed coral.	You will need to guess the amount of coral.
		Use tap water depending on your water source.	Remember to treat for chlorines/chloramines.
		Oolitic argonite can be added.	Needs a warmer tank environment.
		Add limestone.	Never do this with fish in the tank and have your water tested at an aquarium water testing site beforehand.
GH is high	Environmental	Use reverse osmosis water in the tank and a water remineralizer.	If your tap water has low GH but your tank water has a high GH, first check that there is nothing buffering GH, like calcareous decor, then use dechlorinated tap water in water changes to bring GH down
KH is low	Environmental	Add baking soda - 1 tsp/55 gal	Add gradually, over several days. Pre-mix it in a beaker before adding it to the tank.
KH is high	Environmental	Use an acid buffer additive.	Follow the directions on the bottle since this will raise the pH which can result in fish death.
		Mix in distilled water.	You still need the KH from tap water so mix tap and distilled water together until it is within 50-100 ppm.
		Use reverse osmosis water mixed with tap water	You still need the KH from tap water so mix tap and distilled water together until it is within 50-100 ppm.
		Use Indian almond leaves in the tank.	The leaves will break down releasing tannins which will consume the KH and gently lower it but watch that it doesn't drop the pH too low.
		Add a bag of peat moss to the tank.	Add a mesh bag full of peat moss into the filter. The peat moss will release tannins like the Indian almond leaf and lower the KH and pH. Peat moss is great for lowering KH slightly, but again, always monitor with your test kits.

Murky Water	Tank not being cleaned enough	Excess waste and debris in tank. Do a 50% water change making sure to vacuum the bottom of the tank and under any equipment and décor. Change the filter media.	
New chiller has an error code	Defect	Contact the chiller manufacturing company.	Most chillers come with at least a one year warranty.
Nitrate at unsafe level	Build up of waste, usually from overfeeding	<ol style="list-style-type: none"> <li>1. Stop feeding the fish until the nitrate has leveled off.</li> <li>2. Remove water from the bottom of the tank and do a 1/4 water change.</li> <li>3. Retest. If still dangerously high, move to step 4.</li> <li>4. Add NiteOut II or similar treatment product by following the instructions on the bottle label.</li> <li>5. Repeat steps 2, 3 and 4 daily until nitrate has reached safe PPM</li> </ol>	Use this to teach about how chemical levels are maintained in nature versus within a closed system such as your classroom.
Nitrite at unsafe level	Build up of waste	<ol style="list-style-type: none"> <li>1. Stop feeding the fish until the nitrite has leveled off.</li> <li>2. Remove water from the bottom of the tank and do a 1/4 water change.</li> </ol>	Use this to teach about how chemical levels are maintained in nature versus within a closed system such as your classroom.

			3. Retest. If still dangerously high, move to step 4.	
			4. Add NiteOut II or similar treatment product by following the instructions on the bottle label.	
			5. Repeat steps 2, 3 and 4 daily until nitrate has reached safe PPM	
Other Fish	Biological		No other fish can go in your TIC tank.	Eggs are delivered to schools certified disease free. By introducing other fish into the tank, you may be introducing a disease, which in turn may get introduced into your stocking waterway.
pH is high (above 7.5)	Ammonia concentration is rising due to build up of waste by-products		1. Remove waste and uneaten food.	If your pH is slightly higher or lower than the range of 7.0 - 7.5, don't panic. Fluctuations in water quality parameters are the most stressful and harmful to fish.
			2. Change 1/4 of the tank water, making sure to draw from the bottom of the tank.	
			3. Use a product such as pH Down, by following the instructions on the bottle label.	
pH is low (below 7.0)	Soft water		1. Use a product such as pH Up to bring the pH to normal levels by following the instructions on the bottle label.	pH will probably never be <7.0 unless you are using surface water.
Rocks, gravel and other decorations	Aesthetics		Gravel is not recommended any more since schools had a hard time cleaning under the gravel. You may use it if you wish, just remember to vacuum under the gravel. You can also use large river rocks from a local stream, create a bioboard or add other tank decorations	These all provide areas for bacteria to grow, but remember to move them in order to clean thoroughly.

Sinking food	Fish Health	Size 0 food will need to be sunk down to the fish. Do this by agitating the water with spoon or hand.	Remove all uneaten food after 5 minutes.
Smelly water	Dead fish	Check the filters and gravel for dead fish	They may get sucked inside and start to decompose causing the odor.
Some fish are swimming to the surface looking for food, others are still absorbing their yolk sac.	Genetic variation	Wait until at least 50% are swimming up before you start feeding	Follow the feeding guidelines in your activity guide.
Styrofoam on tank	Recommended	Put Styrofoam sheets on the back, bottom and sides of the tank, leaving the front open for viewing.	This protects the eggs and alevin from harmful UV rays, lets the students see inside the tank and helps keep the tank cool and you chiller from overworking.
Tap water	Equipment	Tap water may be used.	See note above for chlorines and chloramines in the tap water
Temperature on the chiller won't drop	Mechanical	May be the temperature sensor so contact the manufacturer for assistance.	
Temperature on the chiller won't raise	Mechanical	May be the temperature sensor so contact the manufacturer for assistance.	
Test Tubes	Equipment	These come with the test kits. If you lose or break one, get another kit. You'll need it anyway.	
Thermometers show different readings	Normal	The chiller readout will always be higher than the digital or floating thermometer in the tank. Do not rely on the chiller readout for tank temperature.	

Trout Food	Biological	Schools are supplied with enough food to feed 200 fish for the year.	The oils in the food degrade very rapidly and unused food at the end of the year needs to be thrown away.
Uneaten food in the water	Tank not being cleaned enough or	1. Vacuum out waste and uneaten food.	Do not feed more than the recommended amount. doin so will reduce water quality. It is always better to underfeed than overfeed. Watch out for the helpers! Sometimes someone, (custodian, other teacher, etc) may want to help byfeeding your fish a little bit extra and you don't know about it! That can create big issues in your tank, so make sure you know how much fee dyour fish are getting.
	Overfeeding	2. Change 1/4 of the tank water, making sure to draw from the bottom of the tank.	
		3. Chcek your feeding guidelines	
Vacations	Natural	Do nothing	Fish can survive for 14 days without eating. They will be fine.
Water Softeners	Environmental	Access water to fill your tank before it goes through the water softener.	The salts from the softener damage the trout.
Water Changes	Maintenance and prevention	Just replace the water you vacuum out unless you have bad test readings. See above for bad test results.	
White foam floating on water surface	Biological	The egg shells are dissolving creating the foam	